

Remarks/Arguments

Claims 1, 2, 8 and 9 have been amended. No new matter has been added by way of these amendments.

Applicants have amended independent claims 1 and 8 to differentiate more clearly the claimed invention over the cited references. The features relating to the native application of the dependent claims 2 and 9 have been incorporated in independent claims 1 and 8, respectively. Accordingly, these features have been removed from the dependent claims 2 and 9.

Further, claim 1 has been amended by making it clear that the sub-sea controller comprises "a virtual machine to execute the downloaded application module separately from the native application". Support for this amendment can be found in the specification paragraphs [0036] and [0042]. Similarly, claim 8 has been amended to make it clear that the method comprises the step of "executing the application module using a virtual machine implemented within the sub-sea controller separately from the native application".

Claims Rejections - 35 USC § 102:

The Examiner rejected claims 1 to 13 under 35 USC 102(b) as being anticipated by Deans et al. (US2004/0262008, referred to herein as "Deans").

Applicants respectfully disagree with the interpretation of the teachings of Deans made by the Examiner. It is respectfully submitted that amended claims 1-13 would not have been anticipated by Deans or rendered obvious to a person of ordinary skill in the art over Deans. Indeed, the mentioned reference does not disclose, suggest, teach, or motivate the skilled person to derive the features of claims 1-13.

Deans discloses a sub-sea communications system. Though Deans in [0038] discloses that "*the subsea communication hub 28 has the capability of accepting a software download from the surface facility 32 of autonomous processing and action criteria*" and that "*Software downloads from the surface facility 32 to the subsea communication hub 28 can also be performed to revise instrumentation calibration*

factors", Deans is silent about the software updating process. In particular, the Examiner's statement that Deans discloses a virtual machine to execute the downloaded application module based on teachings of paragraph [0044] is incorrect. In effect, Deans in [0044] indicates that "*a virtual private network can also be used over the subsea network to provide security*". A virtual private network or VPN is a computer network in which some of the links between nodes are carried by open connections or virtual circuits in some larger network (e.g. the Internet) instead of by physical wires. The link-layer protocols of the virtual network are said to be tunneled through the larger network. A common application is secure communications through the public Internet. Thus, it is clear that the VPN of Deans has nothing to do with the virtual machine (namely a software implementation of a computer that executes programs like a real computer) of the present invention.

As a consequence, Deans does not anticipate claims 1-13. In addition, it is to be noted that the teachings of Deans seem to correspond to the apparatus and method as described in the prior art section of the present application. Further, Deans is totally silent about, thus not concerned by, the problem of stopping the sub-sea well installation during software update. Therefore, one ordinary skill in the art cannot obviously derive the present invention from the sole teachings of Deans.

Claims Rejections - 35 USC § 103:

The Examiner rejected claims 1-3, 6-11 and 13 under 35 USC 103(a) as being unpatentable over Dean (US6,422,315) in view of Marsh et al. (US2002/0159439, referred to herein as "Marsh").

Applicants respectfully disagree with the interpretation of the teachings of Dean and Marsh made by the Examiner.

Firstly, Dean does not disclose a downloading means. The reference 124 cited by the Examiner relates to the pods, more precisely pod 124 and pods 124a, 124b, and 124c. Dean defines a pod as an entity "*containing electronics and valves that are used in the monitoring and control of a wide variety of functions related to drilling operations*". Further, by indicating that "*once a program (or strategy) has been downloaded into a pod's controller's memory and the controller and its associated I/O have been "powered-*

up," the controller runs its program continuously", Dean suggests that the controller and associated I/O are inactive during the downloading phase. Thus, Dean describes a typical apparatus and method as described in the prior art section of the present application.

Secondly, Marsh relates to the dynamic downloading of telecommunication call services in call controller. This teaching relates to a technical domain that does not have the constraints of the very specific domain of sub-sea well installation (deep location, difficulty of access, necessity to withstand or being protected from harsh environment, slow communication, and small bandwidth). It is far from obvious that a person skilled in the art in the domain of subsea engineering would have taken into consideration or consulted a document related to standard surface telecommunication network, gateways, switching system, etc.... Further, it is not obvious to consider a call as equivalent to a temperature measurement, a pressure measurement, or valve/actuator control command. Furthermore, even if it is reasonable to consider the teachings of Marsh, Marsh does not disclose or suggest that the virtual machine executes the downloaded application module while the native application continues to execute itself in a separate manner. Indeed, Marsh teaches that *"after a component is downloaded to the softswitch and initialized, the component no longer needs to use the functions supported by the Java bean wrapper; rather, the component is executed as native code"*. Thus, in contradistinction with the present invention, Marsh does not disclose or suggest the separate execution of the native application (stand-alone) and the application module (by means of the virtual machine) after the downloading operation. Consequently, it is respectfully submitted that amended claims 1 and 8 would not have been rendered obvious to a person of ordinary skill in the art over Dean in view of Marsh. Indeed, the mentioned references do not disclose, suggest, teach, or motivate the skilled person to obviously derive the hereinbefore mentioned distinguishing features of amended independent claims.

The other references, namely Holiday, Jr (US6,202,208) and Rice, III (US2002/0174010) cannot help one of ordinary skill in the art to modify the apparatus and method of Dean to obviously derive the features of the amended independent claims.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and the currently amended independent claims are allowable over the prior art references. Accordingly, Applicant considers the application to be in condition for allowance, and favorable reconsideration on the basis of these remarks is requested.

This paper is submitted in response to the Office Action mailed 5 August 2008 for which the three-month date for response was 5 November 2008. Pursuant to 37 C.F.R. § 1.136(a), Applicant petitions for an extension of time of one month in which to respond to the Office Action. This one month extension will bring the deadline for response to 5 December 2008, which is within the six-month statutory period. The Commissioner is authorized to charge the corresponding fee to Deposit Account No. 50-2183 for the one month extension. Please apply any charges not covered, or any credits, to Deposit Account No. 50-2183 (Reference Number 21.1140).

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Respectfully submitted,

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